

Time: 11:00 - 12:15

STUDENT ID #	2	0						SECTION #	
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QUESTION #	MARKS		COMMENTS
1	10		
2	10		
3	10		
4	10		Mr. Yaser
TOTAL	40		

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Question 1**(10 marks)**

Show the output of each code in the corresponding box to the right.

```
(1) int a =1 , b=2 , c= 1;
    int s = b*b-4*a*c ;
    if ( s == 0 && a==1 )
        cout<<"Factored"<<endl;
    else
        cout<<"Imaginary"<<endl;
    cout<<"Coefficient=" << s << endl;
```

Factored
Coefficient = 0

2

```
(2) int y = 5, x = 49;
    cout <<"X="<< x / 7 << endl;
    switch (x / 7)
    {
        case 1: y++;
        case 2:
        case 3: y = y + 2;
                break;
        case 5:
        case 7: y = y % 3;
    }
    cout <<"Y="<< y << endl;
```

X = 7
Y = 2

2

```
(3) int Sp = 100;
    while ( Sp <= 101 ) {
        cout<<"Speed = "<< Sp << endl;
        Sp++;
    }
    cout<<"Fast & Furious";
```

Speed = 100
Speed = 101
Fast & Furious

3

```
(4) int p, m;
    for (p=1 ; p <= 3 ; p++)
    {
        for (m=9 ; m > 8 ; m--)
            cout << "[" << m-p << "]"<< endl;
    }
```

[8]
[7]
[6]

3

Question 2

(10 marks)

Write a C++ program to calculate and display the net price of pasta based on two user inputs: **Type** (C for chicken, M for Meat, or V for Vegetable) and the number of **appetizers**. The net price of pasta is the sum of the following:

1. Base price of the pasta is 2.5 BD for chicken, 2.5 BD for Meat, and 2.1 for Vegetable.
2. Each appetizer is an additional 1.2 BD.

SAMPLE INPUT/OUTPUT

```
Enter pasta type: C for Chicken, M for Meat, V for Vegetable
C
Enter number of appetizers:
2
Net price = 4.9
```

Answer

```
1
int main()
{
  char      type;
  int       appetizer;
  float     price;

  2
  cout<<"Enter pasta type: C for Chicken,M for Meat,V for Vegetable ";
  cin >> type;

  cout<<"Enter number of appetizers: ";
  cin >> appetizer;

  4
  if ( type=='C')
    price = 2.5;
  else if ( type=='M')
    price = 2.5;
  else if ( type == 'V')
    price = 2.1;

  2
  price += appetizer*1.2;

  1
  cout<<"Net price = " << price << endl;

  return 0;
}
```

Question 3

(10 marks)

A supply chain is performing end of the year store inventory. Write a C++ program that asks the user to enter the Type (D for Deskjet, L for Laser) and price for 120 printers. The program then displays how many Deskjet printers, how many Laser printers and how many other printers.

Answer

```
int main()
{
    1.0 char    type;
    1.0 float   price;
    1.0 int     Deskjet = 0, Laser = 0, unknown = 0;

    2 for (int i=1; i<= 120 ; i++)
    {
        1 { cout<<"Enter price and type (D Deskjet, L Laser) ";
            cin>> price >> type;
            if ( type=='D')
                Deskjet++;
            3.5 { else if ( type== 'L')
                    Laser++;
                else
                    unknown++;
            }
        }

    1.5 cout<<"Deskjet Printers = "<< Deskjet << endl;
    cout<<"Laser Printers = "<< Laser << endl;
    cout<<"Other Printers = " << unknown << endl;

    return 0;
}
```

Question 4

(10 marks)

Assume that we have a file called **savings.txt** with unknown number of lines. Each line contains the client name and his/her saving money in the bank. Below is a sample file.

Write a C++ program that reads all the lines from the file and prints on screen on separate lines the client name and the saved money. The program should also display the total saving money in the bank and the name of the customer who has the highest saving money.

savings.txt

Ahmed	1500
Mohamed	600
Ali	3000

Sample Output

Customer name	saving money
Ahmed	1500
Mohamed	600
Ali	3000
Total saving amount =5100	
Ali has the highest saving money 3000	

Answer:

```
#include<iostream>
#include<fstream>
using namespace std;
```

```
int main()
```

```
{
    int saving,ts=0,max=0;
    string name, nameswap;
```

```
    ifstream infile;
```

```
    infile.open("comp.txt");
```

```
    cout<<"name"<<"\t"<<"saving"<<endl;
```

```
    while(!infile.eof())
```

```
    {
        infile>>name>>saving;
```

```
        ts=ts+saving;
```

```
        cout<<name<<"\t"<<saving<<endl;
```

```
        if(saving >max)
```

```
        {
            max=saving;
```

```
            nameswap=name;
```

```
        }
```

```
}  
cout<<"total saving ="<<ts<<endl;  
cout<<nameswap<<"    hss the highest saving";  
infile.close();  
  
return 0;  
}
```